

## Learning Goal: Estimation Strategies

### Rounding to the nearest place value

Also called  
"To the Nearest Benchmark"

- If you have a number that you would like to have an easier number to estimate with, you could round to the nearest ten, hundred, thousand, ten thousand.

Estimate  $744 + 958$  - Estimate to the nearest hundred

$$\begin{array}{l} 9\underline{5}8 \longrightarrow 960 \\ 7\underline{4}4 \longrightarrow 740 \\ 960 + 740 = 1\,700 \end{array}$$

"5 or more, raise the score.  
4 or less, give it a rest"

- If the **digit below** your **estimated place value** is 5 or greater, round up. If the digit is 4 or less, round down.
- Sometimes it will give us an overestimate or underestimate.
- This strategy may take a little longer to calculate in your head. I may make some errors if the numbers are not easy.

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### Strategy 2: Front-end Rounding

- You look at the front or first digits - the highest place value - and round the **rest of the digits** to zeros.

Estimate  $958 - 744$  is about 1 600

$$\underline{9}58 \longrightarrow 900$$

$$\underline{7}44 \longrightarrow 700$$

$$900 + 700 = 1\,600$$

Estimate  $86\,701 + 34\,675$  is about 110 000

$$86\,701 \longrightarrow 80\,000$$

$$34\,675 \longrightarrow 30\,000$$

$$80\,000 + 30\,000 = 110\,000$$

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Also called  
"Compatible Numbers"

### Strategy 3: Friendly Numbers or "Nice numbers"

- You round the numbers to easier numbers to calculate
- You do not round all the numbers to the same place value.

Nice numbers:  
10s, 100s, 1000s  
Quarters (25, 50, 75)

78 is 3 more than 75  
28 is 3 more than 25

Estimate  $78\,567 + 28\,675$

78 567  $\longrightarrow$  75 000

28 675  $\longrightarrow$  25 000

$$75\,000 + 25\,000 = 100\,000$$

$78\,567 + 28\,675$  is about 100 000

Because I rounded down,  
my estimate is low.

- The estimate will not be close to the actual amount, but it will be easier to calculate in your head

## Learning Goal: Estimation Strategies

Also called  
"Balancing Out"

### Strategy 4: Compensation

- You round one number down and you round the other one up.
- You do not need to round all the numbers to the same place value.

Estimate  $67\ 567 + 38\ 675$

67 567  $\longrightarrow$  70 000

38 675  $\longrightarrow$  40 000

so  $70\ 000 + 40\ 000 = 110\ 000$

$67\ 567 + 38\ 675$  is about 110 000

67 is 3 less than 70  
38 is 2 less than 40  
I know that  $7 + 4 = 11$   
so  $70 + 40 = 110$

- The estimate will be closer to the actual amount because you will be balancing out the numbers.